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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,300	07/28/2003	Maureen A. Defeo	CH2890USNA	6455

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E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
BARLEY MILL PLAZA 25/1128
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WILMINGTON, DE 19805

EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,300

Applicant(s)

DEFEO ET AL.

Examiner

Patricia L. Hailey

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on April 5, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>01/12/04, 04/05/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-5, drawn to an aqueous slurry comprising pigmentary aluminum trihydrate, classified in class 106, subclass 442.
 - II. Claim 6, drawn to a process for making paper, classified in class 162, subclass 158.
 - III. Claim 7, drawn to a paper coating, classified in class 162, subclass 158.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and effects. The aqueous slurry can function as a pigment composition.
3. Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a pigment composition, or as a catalyst precursor. See MPEP § 806.05(d).
4. Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and modes of

operation. Invention II, directed to a process for making paper, will not necessarily produce the paper coating of Invention III.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

7. During a telephone conversation with Jessica Sinnott on September 15, 2005, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-5. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6 and 7 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

9. *Claim 3 is objected to because of the following informalities:*

It appears that claim 3 should read "comprising at least 67-68% by weight...."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. ***Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.***

In lines 1 and 2 of claim 1, the phrase "pigmentary aluminum trihydrate, aluminum trihydrate slurries" is unclear. It cannot be determined whether Applicants' desire for the claimed "aqueous slurry" to comprise "pigmentary aluminum trihydrate", or "aluminum trihydrate slurries". Clarification is respectfully requested.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. ***Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrbaugh et al. (U. S. Patent Application Publication No. 2002/0028288).***

Rohrbaugh et al. disclose materials for coating and coating compositions comprising a nanoparticle system. The nanoparticle system can comprise inorganic nanoparticles generally existing as oxides; examples include hectorite, as well as various forms of alumina (known in the art as aluminum trihydrate), and titanium oxide. See paragraphs [0043]-[0049], paragraphs [0054]-[0061] of Rohrbaugh et al.

Rohrbaugh et al. also disclose that the coating compositions comprising the nanoparticle system may be in any form, such as liquids (aqueous or non-aqueous), etc. See paragraph [0073] of Rohrbaugh et al.

In paragraphs [0074]-[0080] of Rohrbaugh et al., various embodiments of the coating compositions are disclosed, comprising the aforementioned nanoparticles, as well as components such as adjuncts; Rohrbaugh et al. also disclose that the concentration of nanoparticles in the materials or compositions can range "all the way up to 100%" (paragraph [0080]), and further disclose that concentrated compositions "comprise a higher level of nanoparticle concentration, typically from about 0.1% to about 50%, ...of the concentrated coating composition" (paragraph [0276]). This disclosure would provide one skilled in the art with ample motivation to employ the nanoparticles in percentage ranges comparable to those instantly claimed (claims 1, 4, and 5).

In paragraphs [0084]-[0087], Rohrbaugh et al. disclose additional embodiments of the compositions comprising boehmite alumina (known in the art as aluminum trihydrate), and Laponite or Lucentite (hectorite clays).

The compositions can be prepared by dispersing the dry nanoparticle powder with a surfactant and a dispersant; examples of the dispersant include poly (acrylic/allyl alcohol), poly (acrylic/ maleic), etc. See paragraph [0088] of Rohrbaugh et al.; this disclosure is considered to read upon the limitation "dispersant comprising an acrylic dispersing resin".

The coating compositions may also contain carriers such as water, as well as adjunct materials such as germicides and fungicides (considered to read upon the limitation "biocide"), as well as pH control agents. See paragraphs [0098]-[0099] of Rohrbaugh et al., as well as paragraph [0201], which further discloses exemplary biocidal compounds.

Although Rohrbaugh et al. disclose that nanoparticles are "defined as particles with diameters of about 400 nm or less" (paragraph [0045]), this reference is considered to read upon Applicants' "average particle size of at least 0.5 micron" (emphasis added), as one having ordinary skill in the art would readily deduce that such a limitation would include some particles (but, obviously, not all) having particle sizes less than 0.5 micron (500 nm).

Further, although Rohrbaugh et al. do not explicitly disclose or recite the phrase "aqueous slurry" in describing the disclosed compositions, it would have been obvious to one skilled in the art at the time the invention was made that an "aqueous slurry" would be encompassed by the teachings of Rohrbaugh et al., in view of this reference's disclosure of percentage ranges for the nanoparticles as discussed hereinabove, as well as in view of the references' teachings of the presence of components respectively recited in the instant claims.

With respect to claim 2, it would have been obvious to one skilled in the art at the time the invention was made to reasonably expect that the compositions disclosed in Rohrbaugh et al. would be "FDA compliant for indirect food contact", since this

reference teaches the present of components that are respectively recited in Applicants' claims.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

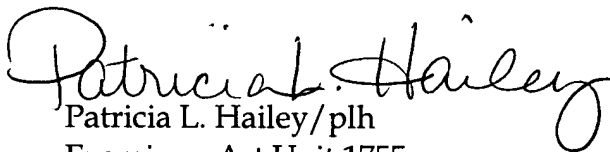
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patricia L. Hailey/plh
Examiner, Art Unit 1755
September 19, 2005



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SUPERVISORY PATENT EXAMINER